

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets

(11)

EP 0 866 131 A3



(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
15.12.1999 Bulletin 1999/50

(51) Int Cl. 6: C12N 15/62, C07K 16/00,
C07K 16/28, C12N 15/70,
C12N 1/21, A61K 39/395

(43) Date of publication A2:
23.09.1998 Bulletin 1998/39

(21) Application number: 98302113.0

(22) Date of filing: 20.03.1998

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE

Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 21.03.1997 JP 6793897

(71) Applicant: Sankyo Company Limited
Chuo-ku, Tokyo 103-8426 (JP)

(72) Inventors:

- Serizawa, Nobufusa,
c/o Sankyo Company Limited
Shinagawa-ku, Tokyo (JP)

- Haruyama, Hideyuki,
c/o Sankyo Company Limited
Shinagawa-ku, Tokyo (JP)
- Takahashi, Tohru, c/o Sankyo Company Limited
Shinagawa-ku, Tokyo (JP)
- Nakahara, Kaori, c/o Sankyo Company Limited
Shinagawa-ku, Tokyo (JP)
- Yonehara, Shin
Kyoto-shi, Kyoto-fu (JP)

(74) Representative: Gibson, Christian John Robert
MARKS & CLERK,
57/60 Lincoln's Inn Fields
London WC2A 3LS (GB)

(54) Humanized anti-human fas antibody

(57) The invention provides humanised anti-human Fas antibodies capable of inducing apoptosis in cells expressing Fas and which are useful in the treatment of

autoimmune disease and chronic rheumatoid arthritis. In addition, the invention provides DNA encoding the variable regions of the H and L chain of such antibodies and methods for humanising antibodies.

EP 0 866 131 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO 92 22653 A (GENENTECH INC) 23 December 1992 (1992-12-23) * page 11, line 19-25 * * page 26, line 23 - page 28, line 5 * * page 48, line 20 - page 49, line 17 * * page 50, line 14 - page 51, line 10 * * example 2 *	1-6,8-17	C12N15/62 C07K16/00 C07K16/28 C12N15/70 C12N1/21 A61K39/395
Y	---	7,18-20, 29-44	
Y	EP 0 709 097 A (SANTEN PHARMA CO LTD ;LLT INST CO LTD (JP)) 1 May 1996 (1996-05-01) * page 4, line 3-14 * * page 3, line 54 - page 5, line 8 * * Claims *	7,18-20, 29-44	
X	KETTLEBOROUGH C A ET AL: "HUMANIZATION OF A MOUSE MONOCLONAL ANTIBODY BY CDR-GRAFTING: THE IMPORTANCE OF FRAMEWORK RESIDUES ON LOOP CONFORMATION" PROTEIN ENGINEERING, vol. 4, no. 7, 1 October 1991 (1991-10-01), pages 773-783, XP002030588 ISSN: 0269-2139 * abstract * * figures 4,5 *	1-6,8-17 --- -/-	TECHNICAL FIELDS SEARCHED (Int.Cl.6) C07K
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	20 October 1999	Covone, M	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT															
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)												
X	<p>FOOTE J ET AL: "ANTIBODY FRAMEWORK RESIDUES AFFECTING THE CONFORMATION OF THE HYPERCARLABLE LOOPS" JOURNAL OF MOLECULAR BIOLOGY, vol. 224, no. 2, 1 January 1992 (1992-01-01), pages 487-499, XP000564649 ISSN: 0022-2836 * page 488, left-hand column, paragraph 2 - page 489, left-hand column, paragraph 1 * * figure 1 *</p> <p>---</p>	1-6,8-17													
A	<p>DATABASE EMBL, PIR2: "Accession number: S37768" RESIDUES: 1-453, XP002119669 * the whole document *</p> <p>& HARINDRANATH N ET AL.: "Comparison of complete nucleotide sequence of the human IgM heavy chain constant region of polyreactive and monoreactive antibodies" MOL. IMMUNOL., vol. 30, 1993, pages 111-2,</p> <p>---</p>	21-28													
A	<p>WO 95 10540 A (IMMUNEX CORP) 20 April 1995 (1995-04-20) * claims 1,19 * * page 2, line 6-17 *</p> <p>---</p>	1-44													
P,X, L	<p>EP 0 799 891 A (SANKYO CO) 8 October 1997 (1997-10-08) * page 2, line 48 - page 3, line 25 * * page 6, line 39 - page 7, line 26 * * page 9, line 6.13 * * claims 1,9,20,32-35 *</p> <p>---</p> <p>-/-</p>	1-20, 29-44													
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>20 October 1999</td> <td>Covone, M</td> </tr> <tr> <td colspan="2">CATEGORY OF CITED DOCUMENTS</td> <td></td> </tr> <tr> <td colspan="2"> X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document </td> <td> T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons S: member of the same patent family, corresponding document </td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	20 October 1999	Covone, M	CATEGORY OF CITED DOCUMENTS			X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons S: member of the same patent family, corresponding document
Place of search	Date of completion of the search	Examiner													
THE HAGUE	20 October 1999	Covone, M													
CATEGORY OF CITED DOCUMENTS															
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons S: member of the same patent family, corresponding document													



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2113

DOCUMENTS CONSIDERED TO BE RELEVANT									
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)						
T	<p>DATABASE CHEMABS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US SERIZAWA, NOBUFUSA: "Trials on the development of drug by an novel anti- Fas monoclonal antibody" retrieved from STN Database accession no. 130:266049 HCA XP002119670 * abstract * & SAISHIN IGAKU (1999), 54(4), 917-924 , -----</p>	I-44							
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>20 October 1999</td> <td>Covone, M</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	20 October 1999	Covone, M
Place of search	Date of completion of the search	Examiner							
THE HAGUE	20 October 1999	Covone, M							
<p>CATEGORY OF CITED DOCUMENTS</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document </td> <td style="width: 50%;"> T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document </td> </tr> </table>				X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document				
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document								

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 98 30 2113

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

20-10-1999

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9222653	A	23-12-1992	AU 675916 B AU 2250992 A CA 2103059 A EP 0590058 A EP 0940468 A JP 6508267 T WO 9404679 A US 5821337 A	27-02-1997 12-01-1993 15-12-1992 06-04-1994 08-09-1999 22-09-1994 03-03-1994 13-10-1998
EP 0709097	A	01-05-1996	CA 2158822 A JP 8208515 A	28-03-1996 13-08-1996
WO 9510540	A	20-04-1995	AU 705114 B AU 7978494 A CA 2174132 A EP 0723556 A JP 9503672 T NZ 275711 A US 5620889 A US 5830469 A	13-05-1999 04-05-1995 20-04-1995 31-07-1996 15-04-1997 25-03-1998 15-04-1997 03-11-1998
EP 0799891	A	08-10-1997	AU 1655297 A CA 2201185 A CN 1167115 A CZ 9700963 A HU 9700676 A JP 9322796 A NO 971448 A NZ 314496 A	09-10-1997 01-10-1997 10-12-1997 15-10-1997 28-01-1998 16-12-1997 02-10-1997 25-02-1999

EPO FORM P0459
For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

THIS PAGE BLANK (USPTO)